

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND the claims and ADD new claims as indicated below:

1. (CURRENTLY AMENDED) An optical repeater, comprising:
  - a first optical amplifier providing Raman amplification by pumping a Raman amplifying medium;
  - a second optical amplifier amplifying input signal light received from the first optical amplifier; and
  - a computation unit computing a noise light component and determining whether the input signal light has been interrupted based on the computed noise light component, and then sending commands to the first optical amplifier and the second optical amplifier to perform shutdown control when the computation unit determines the input signal light has been interrupted.
2. (ORIGINAL) An optical repeater, comprising:
  - a first optical amplifier section comprising
    - an excitation light source generating excitation light and providing Raman amplification by pumping a Raman amplifying medium,
    - a first monitor monitoring power of the excitation light, and
    - a first controller driving the excitation light source;
  - a second optical amplifier section amplifying input signal light received from the first optical amplifier section and comprising
    - a second amplifier,
    - a second monitor monitoring power of the input signal light received from the first optical amplifier, and
    - a second controller driving the second amplifier; and
  - a computation unit determining whether the input signal light has been interrupted based on results of the first monitor and the second monitor, and sending commands to the first controller and the second controller to perform shutdown control when the computation unit

determines the input signal light has been interrupted.

3. (ORIGINAL) An optical repeater, comprising:

- a first optical amplifier having an excitation light source providing Raman amplification by pumping a Raman amplifying medium for Raman amplification;

- a second optical amplifier amplifying the signal light output from the first optical amplifier;

- a monitor detecting excitation light power supplied to the Raman amplifying medium, and detecting the input light power to the second optical amplifier;

- a computation unit computing a noise light power of the first optical amplifier according to results of the monitor;

- a correction unit, based on the computed noise light power, correcting a threshold value used to determine whether the signal light has been interrupted and correcting the input light power to the second optical amplifier, and determining whether the input signal light has been interrupted when the input light power to the second optical amplifier is less than the corrected threshold value; and

- a controller, when the input signal light has been interrupted, shutting off supply of excitation light to the Raman amplification medium and stopping optical amplification by the second optical amplifier.

4. (NEW) An optical repeater comprising:

- a first optical amplifier providing Raman amplification by pumping a Raman amplifying medium;

- a second optical amplifier amplifying input signal light received from the first optical amplifier; and

- means for computing a noise light component, for determining whether the input signal light has been interrupted based on the computed noise light component, and for then sending commands to the first optical amplifier and the second optical amplifier to perform shutdown control when it is determined that the input signal light has been interrupted.

5. (NEW) An optical repeater comprising:

- a first optical amplifier section comprising

- an excitation light source generating excitation light and providing Raman amplification by pumping a Raman amplifying medium,

- a first monitor monitoring power of the excitation light, and

a first controller driving the excitation light source;  
a second optical amplifier section amplifying input signal light received from the first optical amplifier section and comprising  
a second amplifier,  
a second monitor monitoring power of the input signal light received from the first optical amplifier, and  
a second controller driving the second amplifier; and  
means for determining whether the input signal light has been interrupted based on results of the first monitor and the second monitor, and for sending commands to the first controller and the second controller to perform shutdown control when it is determined that the input signal light has been interrupted.

6. (NEW) An optical repeater comprising:  
a first optical amplifier having an excitation light source providing Raman amplification by pumping a Raman amplifying medium for Raman amplification;  
a second optical amplifier amplifying the signal light output from the first optical amplifier;  
a monitor detecting excitation light power supplied to the Raman amplifying medium, and detecting the input light power to the second optical amplifier;  
means for computing a noise light power of the first optical amplifier according to results of the monitor;  
means, based on the computed noise light power, for correcting a threshold value used to determine whether the signal light has been interrupted and correcting the input light power to the second optical amplifier, and for determining whether the input signal light has been interrupted when the input light power to the second optical amplifier is less than the corrected threshold value; and  
means, when it is determined that the input signal light has been interrupted, for shutting off supply of excitation light to the Raman amplification medium and for stopping optical amplification by the second optical amplifier.

7. (NEW) An apparatus comprising:  
an optical repeater comprising  
a first optical amplifier providing Raman amplification,  
a second optical amplifier optically amplifying input signal light received from the first optical amplifier, and

a controller determining whether the input signal light has been interrupted based on a computed noise light component, and sending commands to the first and second optical amplifiers to perform shutdown control when it is determined that the input signal light has been interrupted.